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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/595,521

12/12/2007

Christian Zimmer

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BAKER BOTTS L.L.P.

PATENT DEPARTMENT

98 SAN JACINTO BLVD., SUITE 1500

AUSTIN, TX 78701-4039

EXAMINER

GISSEL, GUNNAR J

ART UNIT

PAPER NUMBER

2856

MAIL DATE

DELIVERY MODE

10/01/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/595,521	Applicant(s) ZIMMER, CHRISTIAN	
	Examiner Gunnar J. Gissel	Art Unit 2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-6,9-11 and 13-18 is/are rejected.
- 7) ☐ Claim(s) 3,7,8,12,19 and 20 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06/27/2006 04/25/2006</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 2, 4, 9, 10, 13, 14 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 6,390,068 to Andreas Hartke et al. (Hartke).
2. Regarding Claim 1, Hartke discloses a method for analyzing combustion noise during the injection of fuel into a cylinder of an internal combustion engine comprising: detecting the combustion noise within an injection cycle in a measuring window which corresponds to a rotation angle of a crankshaft of the internal combustion engine (Hartke, column 3, lines 45-50) wherein an algorithm is formed by means of which a start and/or end position of the measuring window that is variable as a function of operating parameters is determined for the measuring window in order to register the combustion noise of an individual injection pulse (Hartke, column 3, lines 45-50; column 4, lines 10-15, 40-50, 55).
3. Regarding Claim 2, Hartke discloses the end position of the measuring window is placed immediately a start of combustion of a following injection pulse (Hartke, column 3, lines 45-50).
4. Regarding Claim 4, Hartke discloses that the measuring window is started at a start of injection or immediately before a start of combustion of an injection pulse that is to be considered (Hartke, column 3, lines 45-50).
5. Regarding Claim 9, Hartke discloses a device for analyzing the combustion noise during an injection of fuel into a cylinder of an internal combustion engine comprising: a

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knock sensor for recording the combustion noise (Hartke, knock sensor 14) and having an angle sensor for recording the rotation angle of crankshaft of the internal combustion engine (Hartke, column 3, lines 45-50), and a control device comprising a software program with an algorithm, the software program when executed specifying a start and/or end position of a measuring window for an individual combustion noise that is to be recorded, said start and/or end position being variable as a function of operating conditions (Hartke, control device 102).

6. Regarding Claim 10, Hartke disclose that the control device is embodied to quantify an injected amount of fuel from the amplitude or the intensity of the combustion noise (Hartke, column 5, lines 50-55).

7. Regarding Claim 13, Hartke discloses a method for analyzing a combustion noise during the injection of fuel into a cylinder of an internal combustion engine, comprising: determining a start and/or end position of a measuring window that is variable as a function of operating parameters for the measuring window (Hartke, column 3, lines 45-50; column 4, lines 10-15, 40-50, 55), and detecting the combustion noise within an injection cycle in the measuring window which corresponds to a rotation angle of a crankshaft of the internal combustion engine (Hartke, column 3, lines 45-50).

8. Regarding Claim 14, Hartke discloses that the end position of the measuring window is placed immediately before a start of combustion of a following injection pulse (Hartke, column 3, lines 45-50).

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9. Regarding Claim 16, Hartke discloses that the measuring window is started at a start of injection or immediately before a start of combustion of an injection pulse that is to be considered (Hartke, column 3, lines 45-50).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 5, 6, 11, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over anticipated by Hartke with teachings from US Patent 6,196,184 to Achim Przymusinski et al. (Przymusinski).

12. Regarding Claims 5, 6, 11, 17 and 18 Hartke discloses a method of sensing knock, but does not explicitly disclose the start position or a low pass filter or a direct injection engine.

13. Przymusinski discloses that the start position and/or a length of the measuring window is determined by analysis of an envelope which is formed from the received combustion noise (Przymusinski, column 2, lines 23-37). Further discloses is at least one local minimum value is determined by low pass filtering from the envelope which is established over two adjacent injection pulses, a position of said local minimum value being used as the start position for the measuring window (Przymusinski, column 5, lines 1-10). Also disclosed is the control device records the combustion noise on a

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directly injecting diesel or petrol engine (Przymusinski, column 1, lines 55-60). Further disclosed is that the start position and/or a length of the measuring window is determined by analysis of an envelope which is formed from the received combustion noise (Przymusinski, column 2, lines 23-37). Also disclosed is that at least one local minimum value is determined by low pass filtering from the envelope which is established over two adjacent injection pulses, a position of said local minimum value being used as the start position for the measuring window (Przymusinski, column 5, lines 1-10).

14. It would have been obvious to one of ordinary skill in the art, at the time of the invention to combine Hartke with Przymusinski because Przymusinski teaches a way of decreasing engine noise and exhaust emissions (Przymusinski, column 1, lines 48-50)

Allowable Subject Matter

15. Claims 3, 7, 8, 12, 15, 19 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gunnar J. Gissel whose telephone number is (571)274-3411. The examiner can normally be reached on Mon-Fri, 7:30AM-5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571)272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/GJG/

9/25/2008

/Hezron Williams/

Supervisory Patent Examiner, Art Unit 2856